

## ABSTRACT

Catalyst compositions are provided that are useful in selectively removing carbon monoxide from a hydrogen-containing gas. These catalyst compositions preferably have the formula:  $nN/Ce_{1-(x+y+z)} A_x A'_y A''_z O_{2-\delta}$ , where A, A', A'' are independently selected from the group consisting of: Zr, Gd, La, Sc, Sr, Co, Cr, Fe, Mn, V, Ti, Cu and Ni; N is one or more members of the group consisting of: Pt, Pd, and Au; n is a weight percent between 0 and 25; x, y and z are independently 0 to 0.9;  $x + y + z$  is 0.1 to 0.9; and  $\delta$  is a number which renders the composition charge neutral; or  $nN/(MO_x)_y (CeO_{2-\delta})_{1-y}$ , where M is one or more members of the group selected from: Zr, Co, Cr, Fe, Mn, V, Ti, Ni and Cu; N is one or more members of the group selected from: Pt, Pd, and Au; n is a weight percent between 0 and 25; y is 0.1 to 0.9; and x and  $\delta$  make the compositions charge neutral.